ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE **February 1999**

BUDGET ACTIVITY **7 - Operational System Development**	PE NUMBER AND TITLE **0305206A Tactical Reconnaissance Sensors**	PROJECT **DK98**

COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
DK98 Tactical Reconnaissance Sensors	0	7451	4932	4928	6891	4920	4883	5255	0	0

A. Mission Description and Budget Item Justification: This project continues development of advanced tactical reconnaissance and surveillance sensor technologies that were devolved from the Defense Airborne Reconnaissance Office. Hyperspectral, multi-spectral, interferometric synthetic aperture radar sensors, advanced target and image exploitation software will be developed for imaging intelligence (IMINT) and measurement and signature intelligence(MASINT) applications. The adaptive spectral reconnaissance program (ASRP) is a joint DARPA/Army effort funded in this project. ASRP develops the next generation, airborne day/night hyperspectral reconnaissance sensor for the detection and identification of camouflaged and concealed targets in all terrain environments. The Interferometric Synthetic Aperture Radar (IFSAR) Program is executed out of the Joint Precision Strike Demonstration Project Office (JPSD PO). IFSAR provides the capability to rapidly generate three dimensional (3-D) high resolution Digital Terrain Elevation Data (DTED III-V).

FY 1998 Accomplishments: Project funded in DoD PE 035206D.

FY 1999 Planned Program:
- 3451   Develop a compact Long Wave Infrared (LWIR) Hyperspectral Sensor (HSS) system, and full Adaptive Spectral Reconnaissance Sensor System designs for manned and unmanned reconnaissance platforms.
  Integrate advanced spectral detection software processing techniques and a real time algorithm processor for airborne applications.
  Conduct data collection activities of various terrain and environmental backgrounds.
  Conduct real time tests of algorithm processed hyperspectral imaging (HSI) data to cue high resolution imagery of tactical targets.
- 3803   Complete development of near-real time IFSAR system and begin integration and flight testing on reconnaissance aircraft.
  Demonstrate initial high resolution spotlight, stripmap, and IFSAR functionality.
- 197   Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total   7451

FY 2000 Planned Program:
- 4000   – Complete design of LWIR HSS system and integrate on airborne hyperspectral testbed aircraft.
  – Develop and integrate multiple algorithm fusion processing techniques of the advanced spectral detection software.
  – Conduct ASRP data collection activities of various terrain and environmental backgrounds.
  Conduct real time tests of fusion algorithm processed hyperspectral imaging (HSI) data.
- 932   – Demonstrate near real time DTED III-V capability.
  – Demonstrate very fine resolution geographically accurate IFSAR imagery for 3-D earth-centered targeting.

Total   4932

Project DK98	*Page 1 of 2 Pages*	Exhibit R-2 (PE 0305206A)

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 1999	
BUDGET ACTIVITY **7 - Operational System Development**	PE NUMBER AND TITLE **0305206A Tactical Reconnaissance Sensors**	PROJECT **DK98**

FY 2001 Planned Program:

- 1928 Complete development and test of the LWIR HSS system and complete integration and tests on the airborne hyperspectral testbed aircraft. Demonstrate LWIR HSS on manned reconnaissance aircraft.
- 3000 Conduct demonstrations, measure performance, and complete evaluation of military utility with XVIII Airborne and III Corps. Support Warfighter experiments with data collections of IFSAR over prioritized areas of interest.

Total 4928

B. Program Change Summary	FY 1998	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 1999 PB)	0	0	0	0
Appropriated Value		7500		
Adjustments to Appropriated Value				
a. Congressional General Reductions		-49		
b. SBIR / STTR				
c. Omnibus or Other Above Threshold Reductions				
d. Below Threshold Reprogramming				
e. Rescissions				
Adjustments to Budget Years Since FY 1999 PB			+4932	+4928
Current Budget Submit (FY 2000 / 2001 PB)	0	7451	4932	4928

Change Summary Explanation: Program transferred from DoD PE 035206D into Army PE